

Table 12. Revised: Phased TMDL for the Salmon Falls River - Applies in Summer

Phase 1 of TMDL	Design Flow (mgd)	NH3 (lb/day)	Ultimate CBOD (lb/day)	BOD5 (lb/day)	Total Phosphorus (TP) (lb/day)
Natural Background NPS (upstream of Milton)	16.4	3	424	N/A	1.2
Milton, NH	0.1	See note a.	See note a.	See note a.	2 ^(b)
Tributary NPS (from Milton to Lower Great Falls dam)	2.1	0.2	56	N/A	0.4
Allowable Loads at Lower Great Falls (LGF) Dam ^{(c),(d)}	18.6	3.2	480		3
Berwick, ME	1.1	65	429	131	4.4
Somersworth, NH	2.4	143	225	285	9.5
Rollinsford, NH	0.15	18	38	24	1.2
Tributary NPS (Lower Great Falls Dam to the S. Berwick Dam)	0.3	0.1	1	N/A	0.1
South Berwick, ME	0.6	71	228	95	4.8
Great Works River	9.8	N/A	N/A	N/A	2.4
Reserve Capacity (~ 5% of Point Source Loads)		16	50	28	1.3
Total = TMDL ^(d)		316	1451		26.7

Other Recommendations

1. Include performance based TSS in point source limits. Require effluent DO limits of no less than 6.5 ppm for the Berwick and Somersworth WWTFs.
2. Non-Point sources - Implement BMPs on Great Works River Watershed as a priority. Implement BMPs throughout Salmon Falls Watershed, where feasible.
3. Implement simultaneous top and bottom releases from dams, where feasible, during low flow periods to minimize stratification of the bottom layers with emphasis on the Lower Great Falls, Rollinsford, and South Berwick Dams.
4. Ensure dams are operated at run-of-river during low flow periods.
5. Where possible, minimize water withdrawals during low flow conditions.
6. Re-evaluate TMDL after five years. If non-compliance of water quality standards continues to occur, modify the TMDL.

Notes:

- a) Milton loadings for NH₃ and Ultimate CBOD (UCBOD) are not shown because data suggest that Milton's impact for these pollutants at the LGF dam is relatively insignificant. This is due to the high dilution at Milton (165:1), its distance from the LGF dam (over 15 miles) and the assimilation of NH₃ and UCBOD, which are non-conservative substances.
- b) The TP loading for Milton is primarily based on holding current loadings to prevent possible localized excursions of DO water quality standards just downstream of the WWTF. Including a future reserve of 0.2 lb/day, the total TP load at this location is approximately 2.2 lb/day.
- c) Loadings are based on the average of measured values in the LGF impoundment. To prevent possible excursions of DO downstream of the LGF dam (which was the primary focus of modeling efforts for this study) it is important to maintain loadings at or below those shown during summer low flow conditions. For NH₃ and UCBOD, measured concentrations were fairly consistent from upstream of Milton to the LGF dam and are believed to be primarily due to natural sources. For reasons stated in note a) however, the river can actually handle higher loadings of NH₃ and UCBOD than shown in the upper portions of the river as long as they do not cause violations of local DO standards or significantly impact the loadings shown at the LGF impoundment. The loading shown for TP accounts for losses of upstream TP due to uptake and settling.
- d) The primary focus of modeling for this study was from the LGF dam downstream. Consequently the TMDL shown is equal to the sum of the allowable loads at the LGF dam (which does not include upstream loads which do not reach the LGF dam due to assimilation or settlement) and all loads downstream of the dam. If the upstream assimilated or settled loads were included, the TMDL would be higher.